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EXAMINER

ROSSI, JESSICA

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/997,347
Filing Date: November 29, 2001
Appellant(s): MACLACHLAN, JULIA

Donald Schurr
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11/8/05 appealing from the Office action mailed 7/18/05.

Art Unit: 1733

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

A substantially correct copy of appealed claims appears on page 1-4 of the Appendix to the appellant's brief. The minor errors are as follows: lines 4-5 of claim 26 should read "water contact angle that is less than 30 degrees is realized on the area of the surface of the vehicle glazing following the irradiating of the area of the surface of the vehicle glazing."

Art Unit: 1733

(8) Evidence Relied Upon

JP 2001-146439	Yoshinori et al.	5-2001
US 4,543,283	Curtze et al.	9-1985
US 5,556,67	Teranishi et al.	9-1996
US 6,316,059	Van Der Putten et al.	11-2001
FR 2,793,889	Anderson	11-2000
US 4,983,459	Franz et al.	1-1991
US 5,763,892	Kizaki et al.	6-1998
US 5,131,967	Tweadey et al.	7-1992
US 4,931,125	Volkman et al.	6-1990

Yoshinori et al. is directed to a vehicle glazing comprising a glass substrate having a water-repellant (hydrophobic), silane-based functional coating on its exterior surface where the coating is removed from peripheral portions of the substrate by irradiating with UV light having a wavelength in the range of 200-450 nm.

Curtze et al. is directed to a vehicle glazing comprising a glass substrate having a hydrophobic, silane-based coating on its interior surface and removing peripheral portions of the coating so that an item, such as a gasket or frame, can be adhesively bonded to the interior surface of the glazing in the area where the coating was removed and bonded to the exterior surface of the glazing, which does not have a coating applied thereto.

The prior art of Teranishi et al. is directed to a vehicle glazing comprising a glass substrate having a water-repellant (hydrophobic) coating on its exterior surface where the coating

Art Unit: 1733

is selectively applied such that the peripheral portions of the substrate are coating-free so as to facilitate adhesive bonding of an item to the peripheral portions.

Van Der Putten et al. is directed to removing portions of a hydrophobic, silane-based coating from the surface of a glass substrate, which can be incorporated into flat panel displays, using a variety of radiation techniques including UV light having a wavelength of 185 nm.

Anderson is directed to a vehicle glazing comprising a glass substrate having a water-repellant (hydrophobic) functional coating, such as silane-based coating, on its exterior surface.

Franz et al. is directed to a vehicle glazing comprising a glass substrate having a water-repellant (hydrophobic), silane-based functional coating on its exterior surface.

Kizaki et al. is directed to using UV radiation having a wavelength of 172 nm to remove organic substances from the surface of a glass substrate.

Tweadey et al. is directed to using electro-mechanical means to provide relative movement between a source of UV light and a coating disposed on the glass substrate of a vehicle glazing, where irradiation of the coating selectively removes the coating from areas of the glass substrate.

Volkman et al. is directed to using electro-mechanical means to provide relative movement between a source of electromagnetic radiation and a glass substrate.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1733

Claims 26 and 34 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, as set forth in paragraph 6 of the final office action.

Regarding claim 26, it is unclear what Applicant means by “5-120 seconds or less” in line 3. It appears Applicant forgot to delete “or less” in the amendment dated 5/11/05 and therefore the examiner is treating this as an inadvertent error, especially since the present specification only has support for the irradiating time being 5-120 seconds (p. 4, 3rd paragraph). Applicant is asked to clarify.

Regarding claim 34, it is still unclear what Applicant is trying to claim since many of the limitations set forth in this claim were already set forth in claim 23. It is also unclear what Applicant means by “The method of claim 23 for selectively removing a hydrophobic coating” since claim 23 is directed to “A method of adhering an item to an area of a surface of a vehicle glazing” – note lack of antecedent basis exists for “The method of claim 23 for selectively removing a hydrophobic coating.” Applicant is asked to clarify.

It is suggested to rewrite claim 34 to state, --The method of claim 23 further comprising: utilizing electro-mechanical means to provide relative movement between a source of the UV radiation and the hydrophobic coating to irradiate the area of the surface of the hydrophobic coating, thus selectively removing the hydrophobic coating.--

Claim Rejections - 35 USC § 103

Claims 23-24 and 26-33 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshinori et al. in view of Curtze et al. and the prior art referred to by Teranishi et al.

Art Unit: 1733

With respect to claim 23, Yoshinori is directed to a vehicle glazing comprising a glass substrate having water-repellant (hydrophobic), silane-based functional coating on its exterior surface, wherein the coating is removed from peripheral portions of the substrate by irradiating with UV light having a wavelength ranging from 200-450 nm; therefore 200 nm taught by Yoshinori falls within Applicant's claimed range (abstract; oral translation; Section V of international preliminary examination report). The reference is silent as to adhering an item to an area of the substrate from which the coating was removed.

It is known in the vehicle glazing art to apply a hydrophobic, silane-based coating to the interior surface of a vehicle glazing and then remove peripheral portions of the coating so that an item, such as a gasket or frame, can be adhesively bonded to the glazing in the areas where the coating was removed, as taught by Curtze (note gasket/frame adhesively bonded to both interior and exterior surfaces of glazing but no coating removal step needed for exterior surface because no coating ever present thereon – Figure 2; column 7, lines 10-13; column 8, lines 21-24). Furthermore, it is known in the vehicle glazing art to adhesively bond an item to the exterior surface of a glass substrate having a water-repellant (hydrophobic) coating selectively applied thereto such that peripheral portions of the exterior surface of the substrate are coating-free so as to facilitate adhesive bonding of the item to the substrate in these coating-free areas, as taught by the prior art of Teranishi (column 1, lines 48-56).

Therefore, it would have been obvious to the skilled artisan at the time the invention was made to adhere an item, such as a gasket or frame, to the peripheral portions of the exterior surface of the substrate of Yoshinori from which the coating was removed because the art recognizes the removal of portions of a hydrophobic, silane-based coating from the surface of a

Art Unit: 1733

vehicle glazing to provide coating-free areas that are capable of having an item, such as a gasket or frame, adhesively bonded thereto, as taught by Curtze, and because it is also known in the art to adhesively bond an item to the peripheral portions of the exterior surface of a glass substrate that do not have a hydrophobic coating applied thereto, as taught by the prior art of Teranishi, where attaching an item such as a gasket and/or frame to both the interior and exterior surfaces would allow for mounting of the vehicle glazing of Yoshinori within the vehicle.

Regarding claim 24, Yoshinori teaches the coating comprising silane groups, which form siloxane bonds. Selection of a particular type of siloxane coating would have been within purview of the skilled artisan at the time the invention was made depending on the particular function of the coating.

Regarding claim 26, the contact angle is a function of the type of coating and therefore the skilled artisan would have appreciated that the organic, hydrophobic coating of Yoshinori would have a contact angle similar to that of the organic, hydrophobic coating of the present invention. The skilled artisan would have also appreciated that the contact angle after coating removal would be a function of the amount of coating removed and/or the type of substrate underneath. The skilled artisan would have also appreciated that selection of a contact time would have been within purview of the skilled artisan depending on the type of coating, its thickness, the particular source of UV light, etc.

Regarding claim 27, Curtze teaches applying a primer to the portions of the anti-lacerative sheet from which the coating was removed (column 7, lines 14-16 and 25-27). Curtze teaches applying an adhesive (second primer; column 7, lines 28-30 and 36-37) to the primer.

Art Unit: 1733

Regarding claim 28, selection of a particular adhesive would have been within purview of the skilled artisan at the time the invention was made depending on the materials used. It being noted that the claimed adhesives are well known and conventional in the art, wherein the present invention has placed no criticality of the type of adhesive used.

Regarding claim 29, Curtze teaches bonding an elastomeric member 18 to the portions of the anti-lacerative sheet having the primer thereon (column 4, lines 40-44; column 7, lines 25-27).

Regarding claims 30-33, Curtze teaches the elastomeric member being a frame member or gasket (column 4, lines 40-44).

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshinori, Curtze and Teranishi as applied to claim 23 above, and further in view of Kizaki.

Regarding claim 25, selection of a particular wavelength would have been within purview of the skilled artisan at the time the invention was made depending on the particular hydrophobic coating being removed. However, it would have been obvious to use UV radiation having a wavelength of 172 nm because such is known for removing organic substances from the surface of a glass substrate, as taught by Kizaki (column 1, lines 16-24; column 15, lines 27 and 45-46 and 52).

Claims 34-35 and 37-38 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshinori, Curtze and Teranishi as applied to claim 23 above, and further in view of Tweadey and Volkmann.

Regarding claim 34, Yoshinori is silent as to using electro-mechanical means to provide relative movement between the source of UV light and the coating.

Art Unit: 1733

It is known in the vehicle glazing art to use electro-mechanical means to provide relative movement between a source of UV light and a coating disposed on a glass substrate, wherein irradiation selectively removes the same from areas of the glass, as taught by Tweadey (column 4, lines 1-3 and 63-67; column 5, lines 41-43 and 50-51; column 6, lines 1-7). It is also known in the automotive art to use electro-mechanical means to provide relative movement between a source of electromagnetic radiation and a glass substrate, where irradiation of the substrate surface serves to prime the same and therefore improve adhesive bonding between the substrate and a gasket, as taught by Volkmann (column 1, lines 25-30; column 2, lines 33-55; column 3, lines 32-40; column 4, lines 20-32 and 47-50; column 9, lines 30-32).

Therefore, it would have been obvious to the skilled artisan to use electro-mechanical means to provide relative movement between the source of UV light and the coating of Yoshinori because such is known in the art, as taught by the collective teachings of Tweadey and Volkmann, where such allows for an automated process.

Regarding claim 35, Applicant is directed to the rejection of claim 24 above.

Regarding claim 37, it would have been obvious to use a robot arm because such is known, as taught by Volkmann (column 4, lines 20-25), and allows the UV light to be irradiated in the X, Y and Z directions.

Regarding claim 38, it would have been obvious to use a vision system because such is known, as taught by Volkmann (column 4, lines 20-30), because this improves the accuracy of irradiation.

Art Unit: 1733

Claim 36 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshinori, Curtze, Teranishi, and the collective teachings of Tweadey and Volkmann as applied to claim 34 above, and further in view of Kizaki.

Regarding claim 36, Applicant is directed to the rejection of claim 25 above.

Claims 23-24 and 26-33 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art referred to by Teranishi in view of Curtze and further in view of Yoshinori and/or Van Der Putten.

With respect to claim 23, the prior art referred to by Teranishi is directed to providing a water-repellant (hydrophobic) coating on the exterior surface of a vehicle glazing where a mask is used during the coating process to prevent the coating from being deposited along the periphery of the glazing. The prior art wants to prevent the coating from being deposited on these selected areas so that an item can be adhesively bonded to the selected areas in the absence of a hydrophobic coating, whose presence would detrimentally affect the performance of the adhesive. The prior art uses a mask to cover the selected areas during the coating process; however, removal of the mask produces a raised portion along the edge of the coating due to the surface tension of the coating where this raised portion produces optical interference thereby making the coating edge too conspicuous (Figure 4; column 1, line 47 – column 2, line 5).

The prior art of Teranishi is silent as to applying the coating to the selected areas and using UV light to remove the coating from the selected areas.

It is known in the vehicle glazing art to apply a hydrophobic coating to the interior surface of the glazing and then remove peripheral portions of the coating so that an item, such as a gasket or frame, can be adhesively bonded to the glazing in the areas where the coating was

Art Unit: 1733

removed, as taught by Curtze (note gasket/frame adhesively bonded to both interior and exterior surfaces of glazing but no coating removal step needed for exterior surface because no coating ever present thereon – Figure 2; column 7, lines 3-15; column 8, lines 21-24).

Furthermore, it is known in the art to remove a hydrophobic coating from portions of a glass substrate by irradiating the same with UV light having a wavelength that falls within Applicant's claimed range, as taught by Yoshinori (teaches water-repellant/hydrophobic coating on exterior surface of vehicle glazing and removing peripheral portions of coating using UV light having wavelength of 200 nm; abstract, oral translation and Section V of international preliminary examination report) and/or Van Der Putten (teaches hydrophobic coating on glass substrate used for flat panel displays and removing with UV light having wavelength of 185 nm; column 3, lines 35-39; column 4, lines 43-47 and 59-60; column 6, lines 14-27).

Therefore, it would have been obvious to the skilled artisan to apply the hydrophobic coating of the prior art of Teranishi to the entire exterior surface of the glass substrate and then remove the coating along those portions where adhesive bonding between the item and substrate of Teranishi is to take place because it is known in the art to remove peripheral portions of a hydrophobic coating from an area on a surface of a vehicle glazing where adhesive bonding between an item and the glazing is to take place, as taught by Curtze, and because it is also known in the art to remove the peripheral portions of a water-repellant/hydrophobic coating from the exterior surface of a glass substrate of a vehicle glazing, as taught by Yoshinori, where such a removal process eliminates the need to use a mask during the coating process and therefore eliminates the unwanted raised portion produced in the edge of the coating upon removal of the mask.

Art Unit: 1733

Furthermore, it would have been obvious to remove the water-repellant/hydrophobic coating of the prior art of Teranishi using UV radiation having a wavelength that falls within Applicant's claimed range because such is known for removing a water-repellant/hydrophobic coating from a glass substrate in the vehicle glazing art and other related arts, as taught by Yoshinori and/or Van Der Putten, where such a removal technique eliminates the need to use a mask during the coating process thereby eliminating the unwanted raised portion produced in the edge of the coating upon removal of the mask.

Regarding claim 24, the prior art is silent as to a particular coating. Selection of a particular type of coating would have been within purview of the skilled artisan at the time the invention was made depending on the particular function of the coating. However, Yoshinori teaches a silane-based water-repellant coating (oral translation) and therefore the skilled artisan would have been motivated to use such.

Regarding claim 26, the skilled artisan would have appreciated that the contact angle is a function of the type of coating and would have also appreciated that the contact angle after coating removal would be a function of the amount of coating removed and/or the type of substrate underneath. The skilled artisan would have also appreciated that selection of a contact time would have been within purview of the skilled artisan depending on the type of coating, its thickness, the particular source of UV light, etc. However, it is noted that Van Der Putten teaches irradiating for 120 seconds (column 4, lines 51-52).

Regarding claim 27, it would have been obvious to apply primer because Curtze teaches applying a primer to the portions of the anti-lacerative sheet from which the coating was

Art Unit: 1733

removed (column 7, lines 14-16 and 25-27), wherein this would improve bond strength. The prior art teaches applying an adhesive.

Regarding claim 28, selection of a particular adhesive would have been within purview of the skilled artisan at the time the invention was made depending on the materials used. It being noted that the claimed adhesives are well known and conventional in the art, wherein the present invention has placed no criticality of the type of adhesive used.

Regarding claim 29, Curtze teaches bonding an elastomeric molding member, such as a gasket or frame 18 to the portions of the anti-lacerative sheet having the primer thereon (column 4, lines 40-44; column 7, lines 25-27). Therefore, it would have been obvious to use an elastomeric gasket/frame for that of the prior art because such is known, as taught by Curtze, wherein a gasket/frame serves to mount the glazing into the vehicle.

Regarding claims 30-33, Curtze teaches the elastomeric member being a frame member or gasket (column 4, lines 40-44).

Claim 25 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Teranishi, Curtze and Yoshinori and/or Van Der Putten as applied to claim 23 above, and further in view of Kizaki.

Regarding claim 25, selection of a particular wavelength would have been within purview of the skilled artisan at the time the invention was made depending on the particular hydrophobic coating being removed. However, it would have been obvious to use UV radiation having a wavelength of 172 nm because such is known for removing organic substances from the surface of a glass substrate, as taught by Kizaki (column 1, lines 16-24; column 15, lines 27 and 45-46 and 52).

Art Unit: 1733

Claims 34-35 and 37-38 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Teranishi, Curtze, and Yoshinori and/or Van Der Putten as applied to claim 23 above, and further in view of the collective teachings of Tweadey and Volkmann.

Regarding claim 34, the references are silent as to using electro-mechanical means to provide relative movement between the source of UV light and the coating.

It is known in the vehicle glazing art to use electro-mechanical means to provide relative movement between a source of UV light and a coating disposed on a glass substrate, wherein irradiation of the coating selectively removes the same from areas of the glass, as taught by Tweadey (column 4, lines 1-3 and 63-67; column 5, lines 41-43 and 50-51; column 6, lines 1-7). It is also known in the automotive art to use electro-mechanical means to provide relative movement between a source of electromagnetic radiation and a glass substrate, where irradiation of the substrate surface serves to prime the same and therefore improve adhesive bonding between the substrate and a gasket, as taught by Volkmann (column 1, lines 25-30; column 2, lines 33-55; column 3, lines 32-40; column 4, lines 20-32 and 47-50; column 9, lines 30-32).

Therefore, it would have been obvious to the skilled artisan to use electro-mechanical means to provide relative movement between the source of UV light and the coating of the prior art because such is known in the art, as taught by the collective teachings of Tweadey and Volkmann, where such allows for an automated process.

Regarding claim 35, Applicant is directed to the rejection of claim 24 above.

Regarding claim 37, it would have been obvious to use a robot arm because such is known, as taught by Volkmann (column 4, lines 20-25), and allows the UV light to be irradiated in the X, Y and Z directions.

Art Unit: 1733

Regarding claim 38, it would have been obvious to use a vision system because such is known, as taught by Volkmann (column 4, lines 20-30), because this improves the accuracy of irradiation.

Claim 36 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Teranishi, Curtze, Yoshinori and/or Van Der Putten, and the collective teachings of Tweadey and Volkmann as applied to claim 34 above, and further in view of Kizaki.

Regarding claim 36, Applicant is directed to the rejection of claim 25 above.

Claims 23-24 and 26-33 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson in view of Curtze and further in view of Yoshinori and/or Van Der Putten.

With respect to claim 23, Anderson is directed to a vehicle glazing comprising a glass substrate having a water-repellant (hydrophobic) functional coating, such as silane-based coating, on its exterior surface, as taught by Anderson (p. 17, 3rd paragraph – p. 19, 1st paragraph). Anderson teaches the hydrophobic coating can be deposited on an antireflection coating already present on the substrate or the hydrophobic coating can be deposited directly on the substrate (1st paragraph on p. 19). The reference is silent as to removing an area of the coating using UV light and adhering an item to the area.

It is known in the vehicle glazing art to apply a hydrophobic, silane-based coating to the interior surface of a vehicle glazing and then remove peripheral portions of the coating so that an item, such as a gasket or frame, can be adhesively bonded to the glazing in the areas where the coating was removed, as taught by Curtze (note gasket/frame adhesively bonded to both interior and exterior surfaces of glazing but no coating removal step needed for exterior surface because no coating ever present thereon – Figure 2; column 7, lines 3-15; column 8, lines 21-24).

Art Unit: 1733

Furthermore, it is known in the art to remove a hydrophobic coating from portions of a glass substrate by irradiating the same with UV light having a wavelength that falls within Applicant's claimed range, as taught by Yoshinori (teaches water-repellant/hydrophobic, silane-based coating on exterior surface of vehicle glazing and removing peripheral portions of coating using UV light having wavelength of 200 nm; abstract, oral translation and Section V of international preliminary examination report) and/or Van Der Putten (teaches hydrophobic, silane-based coating on glass substrate used for flat panel displays and removing with UV light having wavelength of 185 nm; column 3, lines 35-39; column 4, lines 43-47 and 59-60; column 6, lines 14-27).

Therefore, it would have been obvious to the skilled artisan to remove the water-repellant/hydrophobic coating of Anderson along peripheral portions of the substrate and then adhesively bond an item such as a gasket or frame thereto because it is known in the art to adhesively bond a gasket or frame to the interior and exterior surfaces of a vehicle glazing where peripheral portions of a hydrophobic, silane-based coating present on a surface of the glazing are removed from the area where adhesive bonding is to take place on that particular surface, as taught by Curtze, and because it is also known in the art to remove peripheral portions of a water-repellant/hydrophobic, silane-based coating from the exterior surface of a glass substrate of a vehicle glazing, as taught by Yoshinori, where a gasket/frame allows for mounting of the vehicle glazing within the vehicle and where removal of the coating results in a better bond between the gasket/frame and the glazing.

Furthermore, it would have been obvious to remove the water-repellant/hydrophobic, silane-based coating of Anderson using UV radiation having a wavelength that falls within

Art Unit: 1733

Applicant's claimed range because such is known for removing a water-repellant/hydrophobic coating from a glass substrate in the vehicle glazing art and other related arts, as taught by Yoshinori and/or Van Der Putten, where such a removal technique is more desirable than others which use a mask or risk damage to the substrate by using mechanical or chemical means to remove the coating.

Regarding claim 24, Anderson teaches the coating comprising a siloxane (section [0057]). Selection of a particular type of siloxane coating would have been within purview of the skilled artisan at the time the invention was made depending on the particular function of the coating.

Regarding claim 26, the contact angle is a function of the type of coating and therefore the skilled artisan would have appreciated that the organic, hydrophobic coating of Anderson would have a contact angle similar to that of the organic, hydrophobic coating of the present invention. The skilled artisan would have also appreciated that the contact angle after coating removal would be a function of the amount of coating removed and/or the type of substrate underneath. The skilled artisan would have also appreciated that selection of a contact time would have been within purview of the skilled artisan depending on the type of coating, its thickness, the particular source of UV light, etc. However, it is noted that Van Der Putten teaches irradiating for 120 seconds (column 4, lines 51-52).

Regarding claim 27, Curtze teaches applying a primer to the portions of the anti-lacerative sheet from which the coating was removed (column 7, lines 14-16 and 25-27). Curtze teaches applying an adhesive (second primer; column 7, lines 28-30 and 36-37) to the primer.

Art Unit: 1733

Regarding claim 28, selection of a particular adhesive would have been within purview of the skilled artisan at the time the invention was made depending on the materials used. It being noted that the claimed adhesives are well known and conventional in the art, wherein the present invention has placed no criticality of the type of adhesive used.

Regarding claim 29, Curtze teaches bonding an elastomeric member 18 to the portions of the anti-lacerative sheet having the primer thereon (column 4, lines 40-44; column 7, lines 25-27).

Regarding claims 30-33, Curtze teaches the elastomeric member being a frame member or gasket (column 4, lines 40-44).

Claim 25 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson, Curtze, and Yoshinori and/or Van Der Putten as applied to claim 23 above, and further in view of Kizaki.

Regarding claim 25, selection of a particular wavelength would have been within purview of the skilled artisan at the time the invention was made depending on the particular hydrophobic coating being removed. However, it would have been obvious to use UV radiation having a wavelength of 172 nm because such is known for removing organic substances from the surface of a glass substrate, as taught by Kizaki (column 1, lines 16-24; column 15, lines 27 and 45-46 and 52).

Claims 34-35 and 37-38 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson, Curtze and Yoshinori and/or Van Der Putten as applied to claim 23 above, and further in view of the collective teachings of Tweadey and Volkmann.

Art Unit: 1733

Regarding claim 34, the references are silent as to using electro-mechanical means to provide relative movement between the source of UV light and the coating.

It is known in the vehicle glazing art to use electro-mechanical means to provide relative movement between a source of UV light and a coating disposed on a glass substrate, wherein irradiation of the coating selectively removes the same from areas of the glass, as taught by Tweadey (column 4, lines 1-3 and 63-67; column 5, lines 41-43 and 50-51; column 6, lines 1-7). It is also known in the automotive art to use electro-mechanical means to provide relative movement between a source of electromagnetic radiation and a glass substrate, where irradiation of the substrate surface serves to prime the same and therefore improve adhesive bonding between the substrate and a gasket, as taught by Volkmann (column 1, lines 25-30; column 2, lines 33-55; column 3, lines 32-40; column 4, lines 20-32 and 47-50; column 9, lines 30-32).

Therefore, it would have been obvious to the skilled artisan to use electro-mechanical means to provide relative movement between the source of UV light and the coating of Anderson because such is known in the art, as taught by the collective teachings of Tweadey and Volkmann, where such allows for an automated process.

Regarding claim 35, Applicant is directed to the rejection of claim 24 above.

Regarding claim 37, it would have been obvious to use a robot arm because such is known, as taught by Volkmann (column 4, lines 20-25), and allows the UV light to be irradiated in the X, Y and Z directions.

Regarding claim 38, it would have been obvious to use a vision system because such is known, as taught by Volkmann (column 4, lines 20-30), because this improves the accuracy of irradiation.

Art Unit: 1733

Claim 36 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson, Curtze, Yoshinori and/or Van Der Putten, and the collective teachings of Tweadey and Volkmann as applied to claim 34 above, and further in view of Kizaki.

Regarding claim 36, Applicant is directed to the rejection of claim 25 above.

Claims 23-24 and 26-33 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Franz et al. in view of Curtze and further in view of Yoshinori and/or Van Der Putten.

With respect to claim 23, Franz is directed to a vehicle glazing comprising a glass substrate having a water-repellant (hydrophobic), silane-based functional coating on its exterior surface, as taught by Franz (abstract; column 1, lines 43-45; column 3, lines 18-28). The reference is silent as to removing an area of the coating using UV light and adhering an item to the area.

It is known in the vehicle glazing art to apply a hydrophobic, silane-based coating to the interior surface of a vehicle glazing and then remove peripheral portions of the coating so that an item, such as a gasket or frame, can be adhesively bonded to the glazing in the areas where the coating was removed, as taught by Curtze (note gasket/frame adhesively bonded to both interior and exterior surfaces of glazing but no coating removal step needed for exterior surface because no coating ever present thereon – Figure 2; column 7, lines 3-15; column 8, lines 21-24).

Furthermore, it is known in the art to remove a hydrophobic coating from portions of a glass substrate by irradiating the same with UV light having a wavelength that falls within Applicant's claimed range, as taught by Yoshinori (teaches water-repellant/hydrophobic, silane-based coating on exterior surface of vehicle glazing and removing peripheral portions of coating using UV light having wavelength of 200 nm; abstract, oral translation and Section V of

Art Unit: 1733

international preliminary examination report) and/or Van Der Putten (teaches hydrophobic, silane-based coating on glass substrate used for flat panel displays and removing with UV light having wavelength of 185 nm; column 3, lines 35-39; column 4, lines 43-47 and 59-60; column 6, lines 14-27).

Therefore, it would have been obvious to the skilled artisan to remove the water-repellant/hydrophobic coating of Franz along peripheral portions of the substrate and then adhesively bond an item such as a gasket or frame thereto because it is known in the art to adhesively bond a gasket or frame to the interior and exterior surfaces of a vehicle glazing where peripheral portions of a hydrophobic, silane-based coating present on a surface of the glazing are removed from the area where adhesive bonding is to take place on that particular surface, as taught by Curtze, and because it is also known in the art to remove peripheral portions of a water-repellant/hydrophobic, silane-based coating from the exterior surface of a glass substrate of a vehicle glazing, as taught by Yoshinori, where a gasket/frame allows for mounting of the vehicle glazing within the vehicle and where removal of the coating results in a better bond between the gasket/frame and the glazing.

Furthermore, it would have been obvious to remove the water-repellant/hydrophobic, silane-based coating of Franz using UV radiation having a wavelength that falls within Applicant's claimed range because such is known for removing a water-repellant/hydrophobic coating from a glass substrate in the vehicle glazing art and other related arts, as taught by Yoshinori and/or Van Der Putten, where such a removal technique is more desirable than others which use a mask or risk damage to the substrate by using mechanical or chemical means to remove the coating.

Art Unit: 1733

Regarding claim 24, Franz teaches the coating comprising silane groups. Selection of a particular type of siloxane coating would have been within purview of the skilled artisan at the time the invention was made depending on the particular function of the coating.

Regarding claim 26, the contact angle is a function of the type of coating and therefore the skilled artisan would have appreciated that the organic, hydrophobic coating of Franz would have a contact angle similar to that of the organic, hydrophobic coating of the present invention. The skilled artisan would have also appreciated that the contact angle after coating removal would be a function of the amount of coating removed and/or the type of substrate underneath. The skilled artisan would have also appreciated that selection of a contact time would have been within purview of the skilled artisan depending on the type of coating, its thickness, the particular source of UV light, etc. However, it is noted that Van Der Putten teaches irradiating for 120 seconds (column 4, lines 51-52).

Regarding claim 27, Curtze teaches applying a primer to the portions of the anti-lacerative sheet from which the coating was removed (column 7, lines 14-16 and 25-27). Curtze teaches applying an adhesive (second primer; column 7, lines 28-30 and 36-37) to the primer.

Regarding claim 28, selection of a particular adhesive would have been within purview of the skilled artisan at the time the invention was made depending on the materials used. It being noted that the claimed adhesives are well known and conventional in the art, wherein the present invention has placed no criticality of the type of adhesive used.

Regarding claim 29, Curtze teaches bonding an elastomeric member 18 to the portions of the anti-lacerative sheet having the primer thereon (column 4, lines 40-44; column 7, lines 25-27).

Art Unit: 1733

Regarding claims 30-33, Curtze teaches the elastomeric member being a frame member or gasket (column 4, lines 40-44).

Claim 25 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Franz, Curtze, and Yoshinori and/or Van Der Putten as applied to claim 23 above, and further in view of Kizaki.

Regarding claim 25, selection of a particular wavelength would have been within purview of the skilled artisan at the time the invention was made depending on the particular hydrophobic coating being removed. However, it would have been obvious to use UV radiation having a wavelength of 172 nm because such is known for removing organic substances from the surface of a glass substrate, as taught by Kizaki (column 1, lines 16-24; column 15, lines 27 and 45-46 and 52).

Claims 34-35 and 37-38 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Franz, Curtze, and Yoshinori and/or Van Der Putten as applied to claim 23 above, and further in view of the collective teachings of Tweadey and Volkmann.

Regarding claim 34, the references are silent as to using electro-mechanical means to provide relative movement between the source of UV light and the coating.

It is known in the vehicle glazing art to use electro-mechanical means to provide relative movement between a source of UV light and a coating disposed on a glass substrate, wherein irradiation of the coating selectively removes the same from areas of the glass, as taught by Tweadey (column 4, lines 1-3 and 63-67; column 5, lines 41-43 and 50-51; column 6, lines 1-7). It is also known in the automotive art to use electro-mechanical means to provide relative movement between a source of electromagnetic radiation and a glass substrate, where irradiation

Art Unit: 1733

of the substrate surface serves to prime the same and therefore improve adhesive bonding between the substrate and a gasket, as taught by Volkmann (column 1, lines 25-30; column 2, lines 33-55; column 3, lines 32-40; column 4, lines 20-32 and 47-50; column 9, lines 30-32).

Therefore, it would have been obvious to the skilled artisan to use electro-mechanical means to provide relative movement between the source of UV light and the coating of Franz because such is known in the art, as taught by the collective teachings of Tweadey and Volkmann, where such allows for an automated process.

Regarding claim 35, Applicant is directed to the rejection of claim 24 above.

Regarding claim 37, it would have been obvious to use a robot arm because such is known, as taught by Volkmann (column 4, lines 20-25), and allows the UV light to be irradiated in the X, Y and Z directions.

Regarding claim 38, it would have been obvious to use a vision system because such is known, as taught by Volkmann (column 4, lines 20-30), because this improves the accuracy of irradiation.

Claim 36 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Franz, Curtze, Yoshinori and/or Van Der Putten, and the collective teachings of Tweadey and Volkmann as applied to claim 34 above, and further in view of Kizaki.

Regarding claim 36, Applicant is directed to the rejection of claim 25 above.

(10) Response to Argument

On p. 12 of the remarks, Applicant argues that Curtze discloses the coating being on the interior surface of the glazing and being an anti-abrasion coating to minimize scratching of the interior surface rather than for any purpose related to possible hydrophobic properties.

Art Unit: 1733

First, the examiner points out that the anti-abrasion coating of Curtze is a silane-based, i.e. siloxane, coating (column 8, lines 19-21) and therefore would exhibit hydrophobic properties (note coating of present invention is also silane-based, i.e. siloxane - p. 4, 3rd paragraph) – whether such properties are desired or not. Second, the examiner would like to remind Applicant once again that Curtze is only being used to show it being known in the art to remove a coating, especially a silane-based coating, from portions of a surface of a vehicle glazing to provide coating-free areas that are capable of having an item adhesively bonded thereto wherein the item is also adhesively bonded to the exterior surface of the glazing, which never had a coating applied thereto.

On p. 13 of the remarks, Applicant argues that Tweadey teaches removing metal-based coatings and not hydrophobic coatings.

The examiner points out that Tweadey is only relied upon to show it being known in the vehicle glazing art to use electro-mechanical means to provide relative movement between a source of UV radiation and a coating disposed on a glass substrate, where irradiation of the coating selectively removes the coating from areas of the glass.

On p. 13 of the remarks, Applicant argues that Volkmann says nothing about hydrophobic coatings on an area of a surface of a vehicle glazing.

The examiner points out that Volkmann was only used to show it being known in the automotive art to use electro-mechanical means to provide relative movement between a source of electromagnetic radiation and a glass substrate.

On p. 13 of the remarks, Applicant argues that Kizaki says nothing about hydrophobic coatings on an area of a surface of a vehicle glazing.

Art Unit: 1733

The examiner points out that Kizaki was only used to show it being known in the art to use UV radiation having a wavelength of 172 nm to remove organic substances from the surface of a glass substrate.

On p. 14-15 of the remarks, Applicant argues that Yoshinori teaches partially removing the coating by exposure to UV light while the rest of the coating is protected to avoid exposure to UV light as opposed to the present invention which is directed to no masking or other protective material being required during the UV irradiation step

The examiner points out that this argument is not commensurate with the scope of the claimed invention since the present claim language does not exclude the use of a mask or other protective material.

On p. 15 of the remarks, Applicant also argues that the portion of the coating of Yoshinori which is exposed to the UV light is broken down to generate ozone which is utilized in a later film removal step, whereas ozone generation is not part of the method of the present invention.

The examiner points out that the UV irradiated by Yoshinori is a UV having ozone-generating wavelength and therefore UV is irradiated together with ozone; however, the reference says nothing about this ozone being utilized in a later film removal step. Regardless, Applicant's argument is not commensurate with the scope of the claimed invention.

On p. 15 of the remarks, Applicant revisits the Curtze reference and makes the same argument relating to the fact that the coating of Curtze is on the interior surface of the glazing and therefore one would not be motivated to combine the Yoshinori and Curtze references to arrive at the present invention.

Art Unit: 1733

As stated previously, Curtze is only used to show it being known in the art to remove a coating, especially a silane-based coating, from portions of a surface of a vehicle glazing to provide coating-free areas that are capable of having an item adhesively bonded thereto. One looking to adhesively bond an item to the portions of the exterior surface of the vehicle glazing of Yoshinori, from which the silane-based coating was removed, would obviously look to Curtze since the reference teaches adhesively bonding a gasket/frame to both the interior and exterior surfaces of a vehicle glazing with the removal of a silane-based coating from peripheral portions of the surface of the glazing having such a coating thereon so as to render these portions of the surface capable of having the gasket/frame adhesively bonded thereto.

On p. 15-16 of the remarks, Applicant argues that the prior art of Teranishi teaches a water-repellant coating on the glass substrate and leaving an uncoated region as well, but the reference mentions nothing about removing the coating or using UV light to do so. Applicant argues that one would not be motivated to combine Teranishi with Yoshinori and Curtze to achieve a method of removing a hydrophobic coating using an excimer lamp for at least the reasons previously discussed.

First, the examiner would like to point out that the present claims say nothing about using an excimer lamp and therefore this argument is not commensurate with the scope of the claimed invention. Second, the examiner invites Applicant to reread the rejection set forth above where ample motivation was provided to remove the hydrophobic coating of the prior art of Teranishi based on the teachings of Curtze and Yoshinori and/or Van Der Putten.

On p. 16-17 of the remarks, Applicant argues that Van Der Putten fails to supply any of the above noted deficiencies of Teranishi, Curtze and Yoshinori.

Art Unit: 1733

The examiner points out that Van Der Putten was only used as an alternative secondary reference to Yoshinori, when Yoshinori is only being used as a secondary reference, to show it being known to remove a hydrophobic, silane-based coating from portions of a glass substrate by irradiating with UV light having wavelength of 185 nm.

On p. 17 of the remarks, Applicant also argues that Van Der Putter teaches the source of radiation being an ArF excimer laser, an oxygen plasma, or preferably UV ozone treatment and therefore one skilled in the art would recognize that an excimer laser is significantly different from an excimer lamp.

First, the examiner points out that this argument is not commensurate with the scope of the claimed invention since the present claims say nothing about an excimer lamp. Regardless, the examiner was only relying on the embodiment disclosed by Van Der Putten, which does teach using UV radiation to remove the coating.

On p. 18-19 of the remarks, Applicant argues that Anderson adds nothing to Curtze, Yoshinori and/or Van Der Putten and therefore the claims are patentable over the references singly or in combination.

The examiner invites Applicant to reread the rejection set forth above were ample motivation was provided to remove the hydrophobic coating of Anderson based on the teachings of Curtze and Yoshinori and/or Van Der Putten.

On p. 19-20, Applicant argues that Franz adds nothing to Curtze, Yoshinori and/or Van Der Putten and therefore the claims are patentable over the references singly or in combination.

Art Unit: 1733

The examiner invites Applicant to reread the rejection set forth above were ample motivation was provided to remove the hydrophobic coating of Franz based on the teachings of Curtze and Yoshinori and/or Van Der Putten.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Jessica Rossi

**JESSICA ROSSI
PRIMARY EXAMINER**

Jessica Rossi

Conferees:

RC *Q. C. [Signature]*

SG *[Signature]*